AVIATION

The Oldest American Aeronautical Magazine

FEBRUARY 23, 1925 Issued Weekly PRICE 10 CENTS

Teaching the gospel of flying in the Middle West: Over the Bethany, Mo., Fair

VOLUME XVIII

NUMBER 8

SPECIAL FEATURES

MARGINAL NOTES ON THE WINSLOW BILL

SAN FRANCISCO TO HAVE TAXIPLANE SERVICE

U. S. TO BUY LESS THAN 500 WAR PLANES IN 1925

AN EARLY FORERUNNER OF THE MODERN TORPEDO PLANE

GARDNER PUBLISHING CO., INC.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

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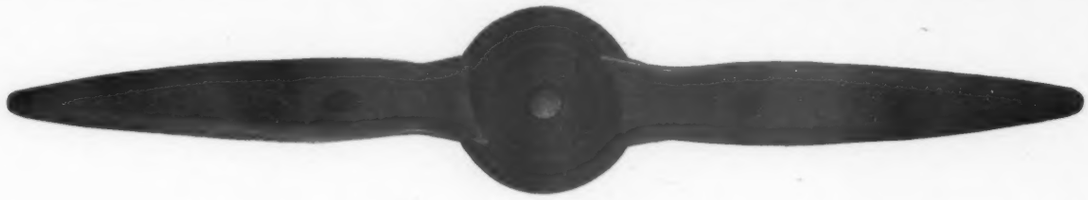

Curtiss Reed Duralumin Propeller used on U. S. Pursuit Planes

FAIRCHILD FLYING CORPORATION

DIVISION OF FAIRCHILD AERIAL CAMERA CORP.

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January 5, 1925.

Curtiss Airplane & Motor Co., Inc.,
Metal Propeller Department,
Garden City,
L.I., N.Y.

Attention: Mr. C. S. Jones.

Gentlemen: -

As one of the civilian aviation companies using the Curtiss-Reed Metal Propeller, we felt that you might be interested to have a report on how this propeller is working out for us.

Last September we purchased from you for our Canadian Company - Fairchild Aerial Surveys Company (of Canada) Ltd. - one of these propellers for use on our Ruff Daland machines. The requirements for a propeller in this work are rather severe inasmuch as this machine is operated as a seaplane all summer, subjecting the propeller to the usual spray conditions encountered with seaplanes, and as a land plane flying with wheels or skiis in the winter time. During much of the summer season the machine is away from its base and, therefore, moored out in the open without protection. Furthermore, in Quebec the temperature differences between winter and summer are very severe.

It was only after very careful flight tests made by the writer personally that the order was placed with you for this Curtiss-Reed Propeller, and we are very pleased indeed to inform you that the results obtained with it have exceeded the guaranteed performance. A great improvement has been effected in the climb of the machine when carrying the heavy loads which are used in Canada, and whereas the wooden propeller formerly used caused excessive vibration in the machine, the Curtiss-Reed metal Propeller has been found to be remarkably smooth. The results have been so good that our Canadian Pilot, Mr. Kenneth M. Saunders, describes them as wonderful.

After over three months' trial, we are thoroughly convinced that the Curtiss-Reed Duralumin Propeller is the best obtainable on account of its qualities of considerably increased performance, safety, durability, and freedom from deterioration due to climatic and other conditions.

We are so well pleased with the results obtained that we are placing with you an order for one more of these propellers to be used on our Ruff Daland machine which we are flying here.

Yours very truly,

Richard H. Depew, Jr.

Richard H. Depew, Jr.,
Vice President.

The Curtiss-Reed Duralumin Propeller will give YOU similar results

Our new prices will interest you

CURTISS AEROPLANE & MOTOR COMPANY, Inc.

Metal Propeller Department

Garden City, N. Y.

FEBRUARY 23, 1925

AVIATION

VOL. XVIII. NO. 8

Published every Monday

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Cooperation or Competition ?

THERE has always been a realization on the part of our Air Services that Commercial Aviation was a thing to be encouraged. High officers in both the Army and Navy have expressed their desire to cooperate to that end in every way possible, and conversation with military fliers will reveal that they are really interested in assisting commercial aviation. The friction that undoubtedly exists to a considerable extent between commercial fliers and the Air Services largely results from a difference in training and mental attitude, and not from a competitive desire to accomplish the same end differently. The soldier trained in the discipline of the Army cannot comprehend the apparently casual attitude of the commercial flier toward rules and regulations, while the civilian pilot cannot understand the formality of Service methods. That this difference will never be removed is true, but a realization on the part of commercial fliers that the Air Service in its own peculiar way is trying to help them along and a better appreciation on the part of the Air Service of some of the civilian pilot's problems might remove a goodly amount of friction.

Almost any of these problems can be seen in two ways. For instance, an Air Service officer desirous of assisting commercial fliers allows a civilian the use of an empty Government hangar so that he may store his plane or conduct some tests. The Air Service is thus helping the flier, but it may at the same time be depriving a nearby commercial field of some much needed revenue. Or an Air Service plane takes some photographs of a special event and gives them to the local news papers, thereby bringing the value of aerial photography before the public. The Officer is thus creating a commercial need, but there are many instances where he has continued filling the need after commercial aviators were able to take and sell the necessary pictures.

The Air Services have done much experimental work with a view to aiding commercial aviation, but the problem is to know when to stop. The Army conducted the early experiments in cotton dusting and now the Huff Daland firm is building cotton dusting planes and is organizing to carry out the dusting work. This is a real aid to commercial aviation and shows that the Air Service not only means well but knows when to stop. On the other hand, Lieut. H. R. Harris one of the country's best pilots, has been granted a year's leave of absence so that he may help in this work and by doing this the Air Service is depriving some commercial pilot of a good job—all with the best intentions in the world.

The Air Service did much of the pioneering in aerial photography and mapping, and its work opened the eyes of the public to the value of air views, but in certain instances they have continued filling this demand to the detriment of the commercial companies. From the commercial point of view, the large mapping project which the Air Service is conducting in Texas is an encroachment on the field of civilian aerial map makers, though in this instance the Air Service has reasonable justification in the fact that the government must do a certain amount of practical map making. However, commercial aviators feel that districts which have already been mapped could be chosen so that the Air Service would have some basis for checking the accuracy of aerial mapping when compared to a map made in the regular way.

The Air Service's mission of doing experimental work, creating a demand and then turning the matter over to civilians as soon as the proposition becomes practical is a most ungrateful task and rather goes against human nature. The problem of the Air Service helping civilian aviation is not as simple as it appears at first glance and should be approached with tolerance from both sides. In the absence of federal legislation which would frame the methods and extent of government cooperation with commercial aviation and provide funds for the purpose, the underlying rule for such informal cooperation as is possible should be the policy which has been accepted in principle by the President and all the government flying services: that development of commercial aviation is essential to the national defense.

Aviation Rampant

IT has been felt in aviation circles that sooner or later "the day" would come in the rivalry between the battleship and aircraft. This momentous time apparently has arrived. The country from coast to coast is literally aflame with interest. The press, in news and editorial columns, is giving the subject the right of way. What will result ?

The chief result will be an intense interest on the part of the public in the future role of aircraft in warfare. Equally important is the skepticism which the older services will meet when they make their proposals for extending their work. The public will have to be convinced more positively than ever before. And this result no one can decry. It applies equally to the claims of aircraft partisans.

There will be other effects which can be regarded as minor, although in themselves they represent major problems in the little world of aviation. If, as has been rumored, the Washington Conference on the Limitation of Armaments was in some particulars affected by the ascending potency of aircraft, how much greater will be the part aircraft must play in succeeding conferences. As President Coolidge has stated many times that he desires such an international meeting, it is possible that this controversy over the relative merits of sea and air defense may have a wide flung international significance. This is what is in our mind when we view the matter from a detached viewpoint.

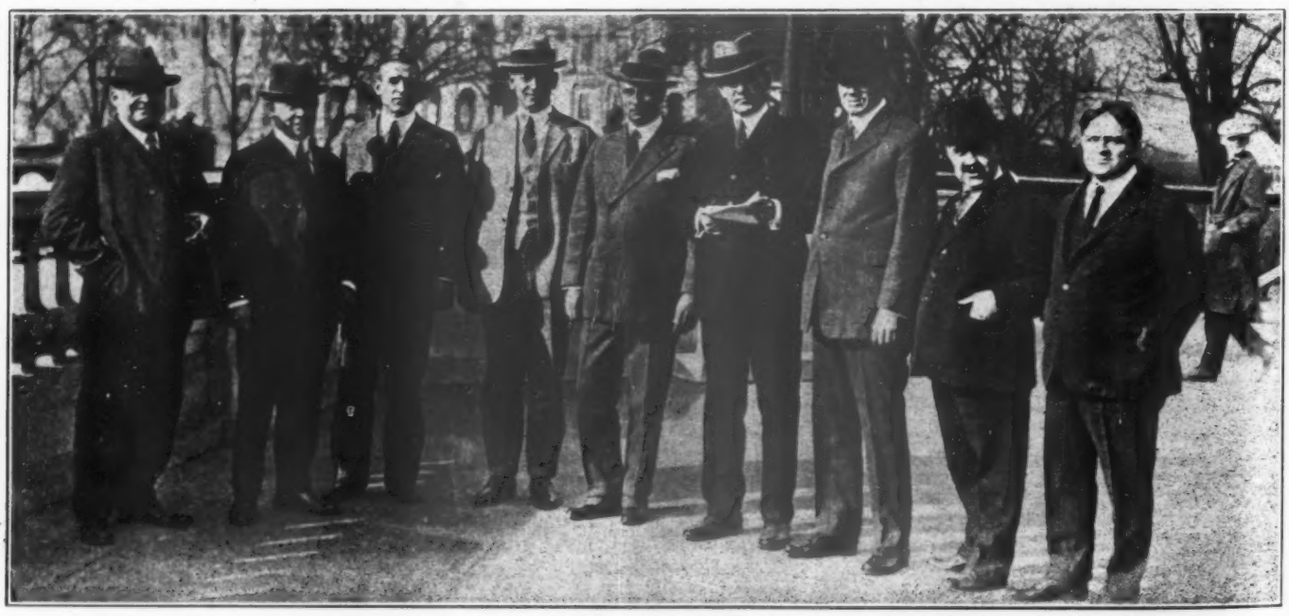
U. S. to Buy Less than 500 War Planes in 1925

Itemized Statement of Actual and Proposed Army and Navy Orders

The table of Government orders for airplanes scheduled for the fiscal years 1924-25 and 1925-26 which is printed below has been prepared from various statements recently made before Congressional Committees. While the accuracy of the figures cannot be fully vouchsafed inasmuch as they involve future commitments and certain other indefinite factors, the table nevertheless shows generally that the various Government Departments plan to purchase less than 500 airplanes during the next fiscal year, which seems woefully inadequate to keep a healthy industry in being.

SCHEDULED FOR ORDER FISCAL YEAR ENDING JUNE 30, 1926			ON ORDER FISCAL YEAR ENDING JUNE 30, 1925			
Naval Aviation						
Type	*Quantity*	*Engine*	*Type*	*Quantity*	*Contractor*	*Engine*
Fighters	27	Curtiss D12 400 hp. WC		14	Boeing	10 Curtiss 400 hp. WC
Observation	43	Wright 400 hp. AC or Curtiss 400 hp. WC		4 *68		4 Packard WC Wright or Curtiss 400 hp. WC
Three-Purpose						
Torpedo	59		CS1	75	Glenn Martin	Wright 575 hp. WC
Scouting	23			72	Boeing	Wright 200 hp. WC
Patrol	20					" 200 hp. AC
Training	40					
	212			161		
Army Air Service						
Primary Training	158		PT1	50	Consolidated	Wright 200 hp. WC
Advance "				10	Huff-Daland	Wright 200 hp. WC
Ambulance				3	Cox-Klemin	
Observation			DH4M	130	Atlantic	Liberty 400 hp.
Bombing Transport	50	Packard 800 hp. WC		10	Douglas	Liberty 400 hp.
Pursuit	50	Curtiss D12 400 hp. WC		12	Boeing	Curtiss D12 400 hp.
Amphibians				9	Loening	Inverted Liberty 400 hp.
Attack	10	Wright or Packard, WC	†Dusters	15		Wright 200 hp.
	268			239		
TOTAL	480			400		

*To be placed before July 1, 1925.
No information yet on actual order.
†For Department of Agriculture

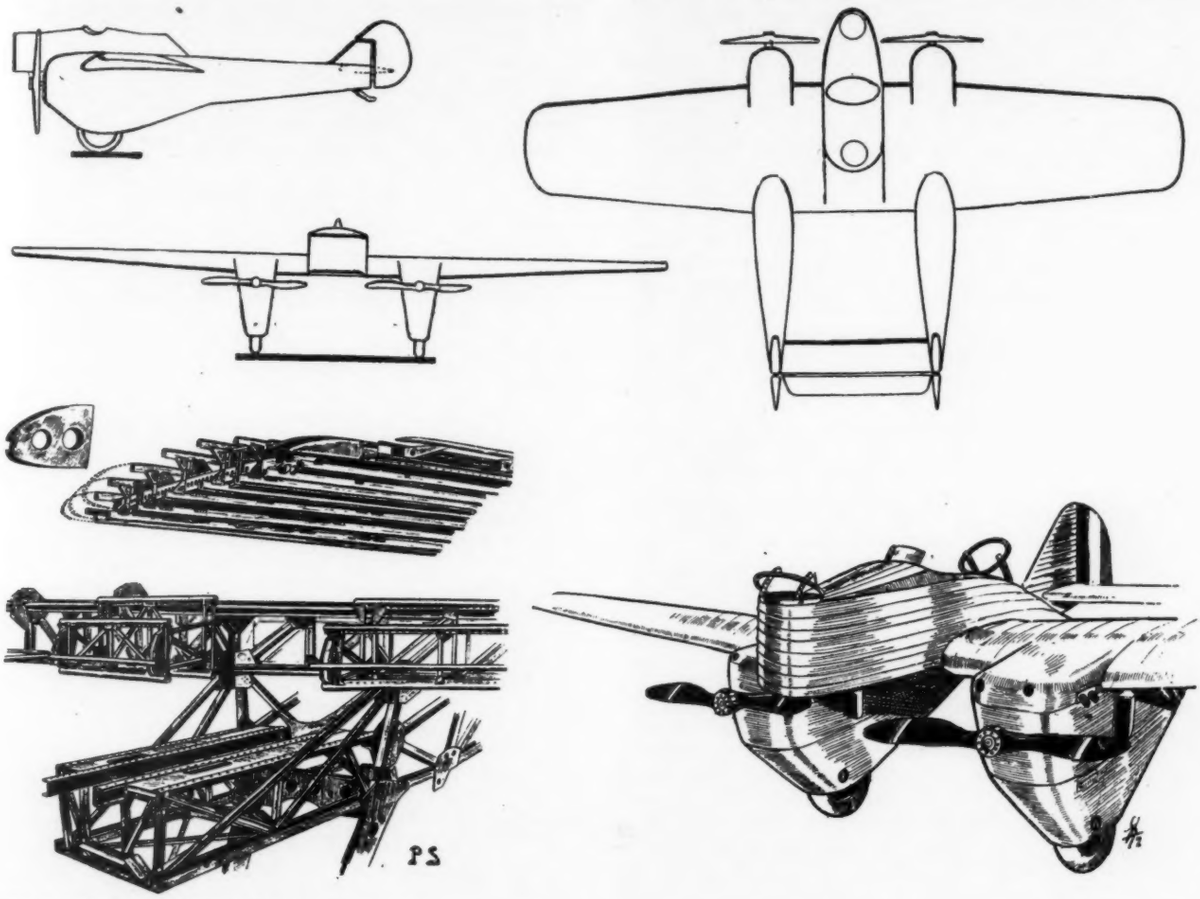


The Select Committee on Aircraft of the House of Representatives, with Brig. Gen. William Mitchell (center)—L. to R.: Representatives Randolph Perkins, chief examiner for the Committee; Florian Lampert, chairman of the Committee; Rep. C. F. Lea of California, Rep. J. V. McClintic of Oklahoma, General Mitchell, Rep. A. H. Vestal of Indiana, Rep. F. R. Reid of Illinois, Reps. A. S. Prall and F. H. LaGuardia of New York

The Schneider Bombardment Escort Plane

Description of a Novel French Twin-Engined Metal Monoplane

One of the most interesting machines at the Paris Aero Show was the twin fuselage monoplane built by Schneider et Cie., the powerful French armament firm which corresponds to Krupps in Germany or to the Bethlehem Steel Co. in the United States. Except for the propellers the entire machine is made of a new light aluminum alloy put out by the Schneider firm under the name of "Alferium". The machine is unorthodox in design but is an interesting attempt to give a good view and field of fire in all directions. From the drawings of the machine a clear field seems to have been established both to the front and to the rear, but laterally the vision is not so complete.



Courtesy Les Ailes and L'Aeronautique

Outline drawing and sketches of the Schneider bombardment escort plane. The sketches on the left show the internal construction of the wing and the wing spar at the engine mounting. The sketch on the right is a three-quarter front view of the ship

A New Military Type

The "bombardment escort" type of machine is little known in the United States, in fact we have never even tried to build one. Its mission is to escort bombing groups where the distance is too great for pursuit ships, and ward off the attack of enemy pursuit planes. Such a plane was not used during the last war and its practicability may not be proved or disproved until the next war, but there is always the possibility that a machine carrying six machine guns and possibly a small cannon could ward off the attack of the pursuit planes in which we specialize. The machine is of course comparatively non-maneuverable, and should be regarded in the light of a flying gun platform.

The monoplane wing seems to be built in a single piece and is of uniform thickness and chord between the two fuselages, but it is tapered beyond the fuselages. The maximum chord is 11 ft. 6 in., while the minimum chord is 8 ft. 6 in. The span is 60 ft. 8 in. The wing has two main "Alferium" beams separated by compression members and also by two horizontal trellises so that the whole forms one huge caisson. Parallel to the main beams and situated at suitable intervals are a series of panels to which are fixed the covering. The covering is of corrugated metal, riveted on the outside, so that it can be replaced in part with considerable ease. There are also ribs to stiffen the covering.

The twin fuselages are of the monocoque type, of smooth alferium reinforced internally by compression members. Each fuselage carries a rudder and vertical fin. The horizontal stabilizer connects the rear of the two fuselages, but does not extend beyond them. The fuselages are detachable from the main wing structure.

Has Extensive Field of Fire

The nacelle is centrally situated between the two fuselages and is mounted onto the wing in such a way that it can easily be detached for repairs. There is a machine gunner's cockpit in the nose, well ahead of the propellers and engines, which gives a splendid forward field of fire. The rear gun cockpit is quite a little in front of the trailing edge and the gunner

can fire through the floor as well as upward, but the arc of fire here is probably not quite so good as in the single fuselage machine. The pilot's cockpit, seating two side by side, is in the middle of the nacelle, just to the front of the main wing beam. All the controls are actuated by a system of push and pull rods. The armament consists of six machine guns.

The power plant consists of two 400 hp. Lorraine Dietrich engines, which are fitted into the nose of the two fuselages. The streamlining of the motor mounting into the landing gear and tail fuselage is extremely clean. Radiators are mounted on the sides of the engine nacelles. The gasoline tanks are placed behind the engines, where they will be comparatively safe against machine gun fire.

The landing gear must be very strong, for the wheels are far apart and in case of a side wind or rough landing they would be subject to a severe strain and there is no external bracing. There is also some doubt as to whether the wing beam between the two fuselages could stand the strain of a bad landing. The landing gear is constructed of flat sheets of alferium properly shaped and formed into box structures and follows the lines of naval structural work. It has generally been considered that the flat plate type of metal construction was suitable for small machines, but that for larger machines it was necessary to use a girder form of construction in which the stress on each cross or longitudinal member could be calculated and so bring about a greater refinement of design. The axle rests in a movable fork, sprung from the fixed Vees by rubber shock absorbers situated inside and near the upper end of the Vees.

The gasoline tanks are releasable in flight. The machine has not as yet been flight tested but its theoretical high speed and fuel load should allow it considerable maneuverability as compared to the bombers which it will protect. The wing loading is rather high, but the power loading is quite low.

SPECIFICATIONS OF THE SCHNEIDER BOMBARDMENT ESCORT PLANE

Two 400 hp. Lorraine-Dietrich Engines

Span	60 ft. 8 in.	Useful load	2,200 lb.
Length	38 ft. 10 in.	Wing loading	12.8 lb./sq. ft.
Height	10 ft. 10 in.	Power loading	10 lb./hp.
Area	613 sq. ft.	Sped at 15,000 ft.	137 mi./hr.
Weight empty	5,830 lb.	Ceiling	23,000 ft.

Marginal Notes on the Winslow Bill

By EARL D. OSBORN

Interpretation of the much discussed Winslow Bill is of considerable difficulty as those parts which interest most of the fliers in this country are purposely left indefinite. The following notes are intended for those who have not read the bill, though in all fairness it should be said that due to the vagueness of the act in its essential parts others who read the bill might give a different interpretation from that expressed below.

The bill creates a Bureau of Civil Air Navigation in the Department of Commerce. Not that the Department of Commerce is especially concerned with aeronautics, but because there is no other place to put it. If the development of aviation must be entrusted to some department it might as well be the Department of Commerce, especially when the Secretary is a man held in as high esteem as Mr. Hoover. There are many, however, who feel that in the near future the importance of the development of aviation will be recognized and a separate department will be organized. Others feel that it is safer to leave the civilian development in a commercial department rather than to associate it in any way with the military development as is done in England, where civil aeronautics is controlled by a Bureau of the Air Ministry, a department which is chiefly concerned with military aeronautics.

The Commissioner's Duties

The Bill starts by laying down the premise that the Secretary of Commerce shall encourage, foster, and promote civil air navigation. His most important function in this connection is the appointment of a Commissioner of Civil Air Navigation. As will be seen later, this is the crux of the whole matter, for it is on the Commissioner's shoulders that will fall the burden of drawing up, interpreting and enforcing the regulations which shall govern the development of civil aviation. The Commissioner will have his salary fixed according to the Classification Act of 1923 and it will probably be about $7,500, which is not sufficient for a man of really high caliber, but would be extremely attractive to a certain type of politician or small man who likes authority. It would be hoped that, due to the great importance and power of the first man to hold the position, the Secretary would be able to obtain the services of a man of real ability. Such great leeway is given to the first Commissioner that the securing of a wise man who is well acquainted with the needs of American civilian flying would make all the difference as to whether the law advanced or checked civil aviation in this country.

The Bill provides for the appointment of an assistant commissioner, three lawyers and such other help as may be necessary. The Commissioner may publish a bulletin giving data as to air navigation activities, accidents, field and route information, treaties, laws, etc. The Bill is carefully worded to prevent any duplication of the experimental technical work of the N.A.C.A. but the Airways Section of the Army has not been so completely successful in eliminating any possibility of duplication of their mapping work.

$375,000 for First Year

The Commissioner shall investigate the causes of all accidents in civil air navigation which all will agree is a most valuable function. The clauses concerning the loaning of military personnel to the bureau is taken by some to mean that Army and Navy officers will have much to do with the administration of the law and that they will do the field inspection work, etc., but this is not the usual interpretation.

There is available for the administration of the functions vested in the Secretary a sum of $375,000 for expenses incurred prior to July 1, 1926. This should end the fear expressed by many gypsy fliers that the expenses of administering the bill will be shifted to them and prove so heavy as to work a serious injury. The expenses of the first year or so in building up regulations and administrative machinery will be particularly heavy, but on the other hand there is a danger that a large organization may incidentally be created and as these functionaries will have to find some thing to do to keep their jobs, the only thing they can do is to multiply and strictly enforce regulations. Paradoxical as it may seem, the large appropriation attached to this bill is one of its most dangerous features: $375,000 would solo over 1000 young fliers and many feel that money thus spent would do more to build up aviation than if it were used in creating and administering regulations to govern flying.

Regulations Seem Flexible

The parts of the bill which really interest the fliers of this country may mean everything or nothing at all. The Secretary of Commerce is authorized by regulation to provide for the periodical inspection and testing of American civil aircraft as to their airworthiness. Actually, the Secretary of Commerce will not have time to draw up the regulations so that this work will have to be done by the Commissioner of Civil Air Navigation. No indication, however slight, is given as to what these regulations shall be. It is quite right the

law should not be too specific in this instance. Aviation is still in a state of growth and the regulations governing its uses should be flexible and amendable. On the other hand, as every civilian aviator knows, intelligent and well meaning men could perfectly well draw up a set of regulations that would stifle the development which has given the United States more civilian aviators than any other country in the world possesses. It is commonly considered that the American Aeronautical Safety Code would be the basis for the regulations. This most excellent code goes into the minutest details regarding anything that deals with the structural safety of an aircraft. For instance, it gives advice as to the location and construction of ignition switches, the texture of the sidewalks, etc. The advice is sensible and practical, and as such would tend to increase the safety of airplanes, but many people consider that any set of rules describing in detail the safest type of construction would tend to formalize designing and would not develop initiative. This would certainly be so if the Code were inflexibly enforced by bureaucrats such as the Government alone can develop.

Inspection of Aircraft

The periodical inspection and testing of civil air navigation facilities as to their suitability for safe and efficent use is also rather vague. While there are undoubtedly many fields which should not be used by such civilian aircraft as now exist, yet if every aircraft were made by law to fly from a perfect field there would be little incentive for the development of an airplane that would handle safely out of a small field. Without any clue as to what the regulations will be it is perhaps unfair to make this comment, but the possibility of a set of "finicky" rules is one of the things which has scared so many pilots away from any aircraft legislation.

The examination and determination of the qualifications of individuals to serve as airmen will be based upon their character, physical fitness, training, and practical experience. This again may mean a lot or nothing, and it will depend entirely on the regulations which are still to be drawn up. In this matter the whole conception of the Army, the Navy and such transportation lines as the Air Mail is that the pilot must be in perfect physical shape and there is a tendency to feel that he must be a superman. This is quite right for those services, but if only carefully selected men are allowed to fly they will be perfectly capable of handling the present type of plane and there will not be the same necessity for creating a machine that is easier to handle and more nearly fool-proof. Apparently the regulations will take into consideration different classes of pilots for different types of machines and work, but after reading the Bill carefully and listening to some of the committee discussion it is feared that some of the committee may not be fully aware of the importance of such distinctions.

Log Books and Penalties

The provisions for maintenance of log books for civil aircraft is absolutely necessary at the present stage of development, but if the airplane should develop along the lines of the automobile and come into really common use, it would be a serious nuisance to have to make entries for every trip, and a precedent once established is likely to stick.

A first reading of the clauses which contain the penalties for violation of the regulations give one a nasty shock, for they are full of civil penalties of $500 and $1,000. Local and state violations of laws are usually punished by fines of not more than $500 and not less than $5, but due to some legal reasons the Federal government usually imposes a penalty of a fixed amount though it actually accompanies this by an offer of compromise which may be for an entirely nominal amount. This arrangement is very flexible and was incorporated into the Winslow Bill after much discussion with the idea that it would be easier to make an equitable adjustment with this provision than with the maximum and minimum penalties clause.

The bill provides no machinery for the administration of licensing and inspection, but it is assumed that various civilian pilots will be appointed to do the actual field inspection. In England licensed ground mechanics have to certify that they have inspected the machine and that it is airworthy before every flight. If the machine has trouble due to its being in bad condition, the ground mechanic is held responsible. The inspection in this country will hardly be so stringent and will probably affect only those machines which are badly run down. The inspection and structural strength regulations in England seem to have been somewhat relaxed during the past year. The building up of a satisfactory system of inspection will take considerable time.

Air Navigation Facilities

The bill authorizes the Secretary of Commerce to establish aerial light houses, radio stations etc. under special appropriations from Congress, but it quite pointedly leaves out the establishment or operation of landing fields. It seems rather too bad that this clause has been left out of the bill. Congress would have to pass on any appropriations for this purpose, just as it does for the development of our harbors and inland waterways and it is hard to see why the Commissioner of Civil Aeronautics should not be able to develop landing fields provided that Congress votes the funds.

The clauses relating to the entry and clearance of planes to foreign countries sound rather complicated and terrifying to the average flier, though as a matter of fact even under the present law a plane which flies from Key West to Havana has to make out the same papers as does the Mauretania when it sails for Europe. Under the present law there are some fifteen papers to be made out and several officials to be seen on departure as well as on arrival. Without going in to the details of the Winslow Bill it modifies and greatly simplifies the laws which apply to the entrance and clearance of ships so as to suit them to aircraft. It is absolutely necessary to have very strict laws on this subject and to be able to enforce them strictly in order to prevent smuggling and illegal imigration. It is probable that when international flights become more frequent, new laws and regulations will be devised. In fact, the F.A.I. is working on an identity card system which can be used for touring airplanes and works somewhat on the principle of the permit which an automobile gets when it passes through a foreign country. The present laws were drawn up to apply to long cruises and the pilot of a single seater is rather startled when he is asked to fill out a form certifying that none of the crew died during the trip. Simplification of the present entrance and clearance laws will greatly help international flying.

Bill of Lading

The Bill also provides that a bill of lading shall be made out for all merchandise carried by air and goes into great detail on this subject. This will assure the shipper the same opportunity for recovery in case of damage which he would have if the merchandise were shipped through by ordinary means. It will also force the aerial transportation company to use more system than is used at present and to do things in a more business like way.

The Winslow Bill is really quite long and complicated so that the above should by no means be taken as an exhaustive study. The legalizing of flying will have many advantages and it is certain that the Bill has been very carefully studied from this point of view. No legislation has ever been a panacea for all ills, but if applied with moderation and wisdom it certainly can do much good.

Paris—New York Flight Planned

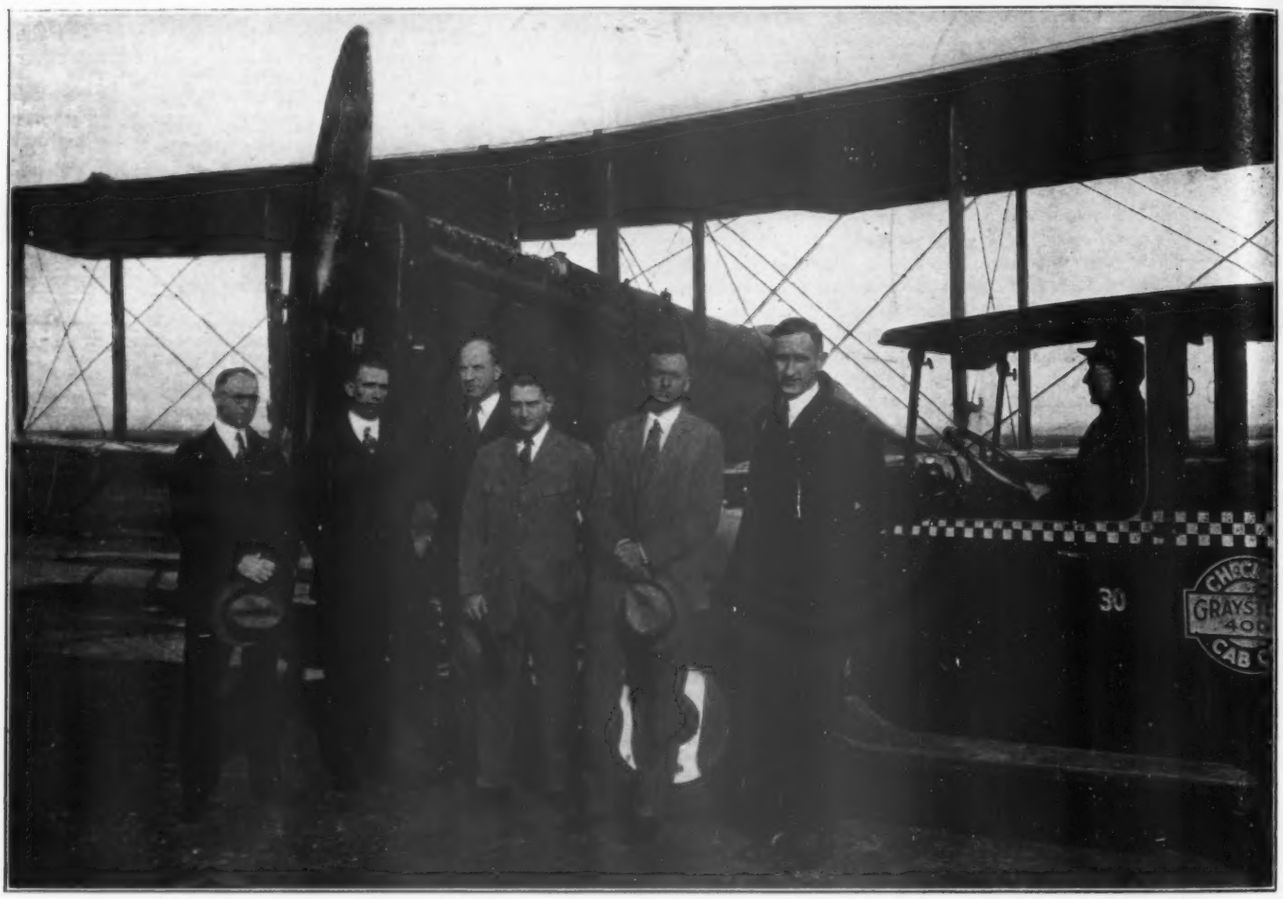
The French Under Secretary of State for Aeronautics is credited by Paris newspapers with organizing a non-stop airplane flight from Paris to New York.

No details are given by the newspapers, except that they assert that the trip will be made in a 500 hp. single motor monoplane, and that it is expected the voyage will require 30 hr. The weight of the machine will be five and a half tons, of which three and a half tons will consist of gasoline and oil.

San Francisco to Have Taxiplane Service

Varney Air Service Merges with Checker Cab. Co.

One of the greatest forward steps ever taken in this country to make commercial air transport available to the public is announced from the Pacific coast with the consolidation of the aircraft interests of Walter T. Varney and the Checker Cab Co., both of San Francisco, for the purpose of operating a taxiplane service to any point of the West coast cisco to Los Angeles, a distance of 340 mi. takes a whole day by railroad whereas it can easily be covered by a taxiplane of the types used by the Checker Air Service Co. in about 4 hr. A business man of San Francisco will thus be enabled to leave the city early in the morning, transact business in Los Angeles, and be home again by night — a clear saving of an



The officers of the newly formed Checker Air Service Co. of San Francisco—(L. to R.) W. L. Rothschild, treasurer; Walter T. Varney, chief of air service, Hal Bruntsch, construction superintendent; J. A. Baldi, president; J. W. Pettit, vice president and general manager; A. L. Murphy, secretary

The new company, which will be known as the Checker Air Service Co., is capitalized for $500,000 and will be directed by officers of the present Varney Air Service and Checker Cab as follows: President, J. A. Baldi; Vice President and General Manager, J. W. Pettit; Chief of Air Service, Walter T. Varney; Secretary, A. L. Murphy; Treasurer, W. L. Rothschild; Construction Manager, Hal Bruntsch.

To Operate Modern Equipment

The air fleet of the company consists of three New Swallows, two Hispano-Standards and two Hispano-Jennies. Delivery of three more New Swallows is expected shortly. All these ships will carry two passengers and light hand baggage beside the pilot.

With two passengers bound for the same destination, the rate per mile will be 20 cents per passenger, which is more than a 50 per cent reduction on the fare commonly charged by air transport companies in this country.

What this service will mean for the Pacific coast will be appreciated when it is known that the trip from San Francisco to Los Angeles, a distance of 340 mi. takes a whole day by railroad whereas it can easily be covered by a taxiplane of the types used by the Checker Air Service Co. in about 4 hr. A business man of San Francisco will thus be enabled to leave the city early in the morning, transact business in Los Angeles, and be home again by night — a clear saving of an entire business day, not to speak of avoiding the discomfort of a long railroad journey. From the viewpoint of flying, the country is excellent, affording numerous emergency landing fields as well as permanent airdromes where service can be obtained. The beautiful scenery, on the other hand, will greatly add to the pleasures of this air route.

The new company will also inaugurate sight seeing trips traversing the district south of San Jose and back over Oakland, thence to Tamalpais and the county of Marin. In two hours or less the visitor will be able to find out more about San Francisco and its environs than would be possible during a couple of weeks, all for a cost $25.00. It is also planned to handle package freight and parcel delivery which offer untold possibilities for business development.

A Prediction Comes True

Besides operating commercial planes, the company announces that it will manufacture passenger ships for taxi service. The announcement follows closely on the heels of an editorial by Mr. Brisbane in the Hearst papers headed

"The Flying Machine, It will Change Life." Pointing out the wonderful future for airplane service he wrote among other things:

"Flying for long journeys will replace railroading completely within the lives of middle-aged men now living.

"Transportation through the air on a great commercial scale will probably be developed first in this part of the world, (California) for here the need is greatest. Californians can fly a thousand miles along their own coast and zigzag east and west two or three hundred miles all above California soil.

"Fortunate he that is first in the field of successful commercial flying, on a big scale."

To Start Operation April 5

This prophecy is now come true for San Francisco and its neighbors. Beginning April 5, next, the Checker Air Service Co. will start operating the first combined taxicab-airplane service in America. Here is how the new plan will work. A telephone call to the company will bring one of its taxicabs to the door and carry the traveler to Crissy Field, where a taxiplane will be in readiness to fly him to any point on the Pacific Slope. At the point of destination another taxicab will be waiting to take the traveler to the city. The loss of time incident to traveling from a city to its airport and vice versa, which has so far been one of the most serious difficulties an aircraft service had to contend with, will thus be cut down to a minimum.

That rightly conducted flying is far safer than riding on our present highways is the contention of Mr. Varney, who is a pioneer in flying, in training pilots, and in carrying passengers. He has been in the work since 1916 and having flown a total distance of 150,000 mi., he has never had a fatality or any serious trouble. He points out that "taxiplaning" will be as fully safeguarded as properly managed railroads and that accidents are only possible through carelessness or stunt flying. Mr. Varney has taught hundreds of fliers at his school and airdrome in San Carlos, many of them being students from China, South America, and other foreign countries. He has one of the largest schools of the kind in America and has built many successful planes. He fully expects that not only men but women will soon make full use of the airplane service. His wife is an enthusiastic pilot and flies alone practically every day.

This Week's Cover Illustration

The fine aerial photograph which is reproduced on this week's cover was kindly contributed to AVIATION by C. Howard Duncan, of Tarkio, Mo., who writes as follows:

"The photograph shows a typical scene in the Middle West, where the gospel of flying is being spread each year. At each of the many fairs held in this part of the country you will always find at least one ship, frequently more. Crowds running from 5,000 to 35,000 people on these occasions get a real close-up of flying which they would not otherwise. And the small operator with one or two ships reaps a harvest in passenger work.

"This particular picture shows the Bethany, Mo., Fair, and the day the picture was made there were 25,000 people present. The photograph was taken with a 3A Graflex camera from a Swallow plane."

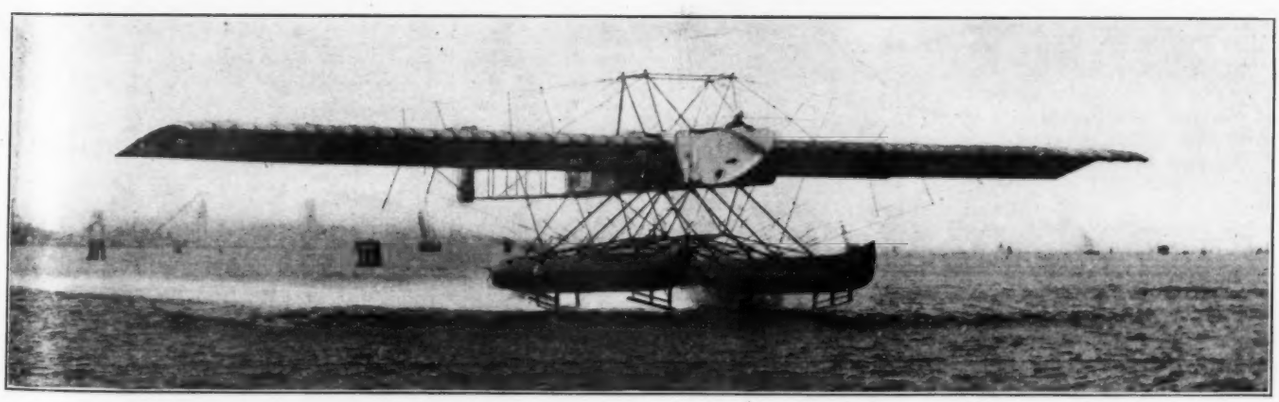
Modern Torpedo Plane has Early Ancestor

Now that torpedo planes are recognized as a necessary complement of the other types of aircraft making up Naval Aviation, it is interesting to find that an experimental torpedo plane was built and flown as early as 1912, and that a 700 lb. torpedo was launched from it two years later.

The plane in question, which is illustrated herewith, was built at the Italian navy yard in Venice, to the designs of Gen. Alessandro Guidoni, formerly Italian air attaché in Washington and now chief of the construction corps of the Italian air force. As may be seen, the plane was an externally braced monoplane with heavily cambered wings—as was the custom of the period—and its flotation gear consisted of rubber sprung twin floats which were fitted with a series of hydroplanes. The latter provision answered the purpose of accelerating the take-off through the dynamic reaction of the water.

The power plant consisted of two 200 hp. Gnome 14 cylinder rotary engines which were mounted in the fuselage behind the pilot's cockpit, with a co-axial propeller turning as in a torpedo.

Some constructional features rendered this ship remarkable at the time it was produced. The wing spars and ribs were constructed of duralumin and wood; the fuselage was of steel tubing. The hydroplanes, which represented a very good device for rough water landings, proved very satisfactory.



The earliest forerunner of the modern torpedoplane—The Guidoni float monoplane, built in 1912, at the moment of taking off

The machine had the following characteristics: Span 66 ft., overall length 50 ft., chord 13 ft., wing area 800 sq. ft., weight empty 6600 lb., weight loaded 9400 lb.

When the World War broke out nobody believed in the practical utility of such a "fantastic" thing as a torpedo plane; so Commander Guidoni's ship was taken down and stored away to enter history.

Improvements in Commercial Airship Design*

English Lighter-than-Air Expert Outlines Interesting Developments

It is useless to expect airship-owning firms to start running regular lines till they are convinced that the aeronautical engineers can provide them with airships that will attract passengers.

Airships will not attract passengers till they are safe, and till the fares can be low enough to bring them within the means of the average individual. Our commercial airship must fulfil the following requirements:—

(1) It must be structurally strong.
(2) It must be safe against fire.
(3) It must be very controllable in any weather.
(4) It must be cheap to run.

Structural Strength

Experience with earlier airships of the R33 type and others has shown that ample strength can be obtained when half the total displacement is devoted to the hull and engines. The new commercial Zeppelin, ZR-3 has this proportion. With increase in size it is possible to allot a smaller proportionate weight to the hull and engines while keeping the same strength.

As to the type of airship—whether rigid or semi-rigid—for commercial purposes, it is too early to form a definite opinion. My personal preference lies with the semi-rigid, anyhow for the smaller sizes. The new Parseval type, for instance, consists of a keel the whole length of the ship supported by gas-bags, as in the Zeppelin type, but divided longitudinally as well as transversely. They are under steel nets, and over all goes an outer cover, leaving a six-inch space between it and the gas-bags all round, which is very suitable for filling with inert gas. The upkeep of such an airship should be simple and cheap, and the whole of the metal-work under compressive loads is easily kept under supervision, which is not the case in the rigid type. The advantages and disadvantages of the two types are so nicely balanced, that till a ship of each type, of similar size, and employed on the same service, has been tested over a long period, it will not be possible to reach a decison, but it may be accepted that both types are perfectly capable of running an airship service quite efficiently.

Safety Against Fire

The first and most pressing need is the abolition of gasoline. There are always gasoline fumes hanging about in large airships, and in hot climates the evaporation is serious. The most direct and simple way, of course, is to fit engines of the heavy-oil Beardmore type. A second way is to use hydrogen drawn from the gas-bags in conjunction with a heavy fuel in the ordinary engine, and the third way is to gasify crude oil, by a new process shortly to be introduced to the public by an inventor, a well-known petroleum expert.

Before considering the merits of these three systems, we have to consider another point—namely, the protection of the hydrogen against fire by putting a layer of inert gas round it.

Exhaust Gases to Offer Protection

Various methods have been suggested from time to time, such as double-walled gas-bags containing nitrogen or ammonia gas. Here we met the difficulty that when the airship rises the protective gas will expand and blow off into the atmosphere, and there is no means of replacing it. It has been proposed to insert ballonnets into each gas-bag, into which the inert gas would flow as it expanded, but in that case it would push out hydrogen and make the ship heavy. The double-walled gas-bags are also of undue weight.

By far the simplest and most efficient means appears to be to utilize the exhaust gases for protective purposes. There is an ample and constant supply of these which have only to be cleaned and cooled below boiling point, so as not to hurt the fabric, and then turned into the ring space between the gas-bag and outer cover. The ordinary doped outer cover should be quite gas-tight enough to contain it. We need only deal with a portion of the exhaust gas, such as can be dealt with by the weight of apparatus we can afford to carry, and a large part of the cooling is done in the ring space. First we can use the gas for cooking, as at present, and then for warming the living spaces. If it requires further cooling it can be passed between metal plates let in flush with the side in the slip stream of the propeller and finally expanded into the ring space.

Here, being heavier than air it will accumulate at the bottom, and the air will be forced out through lightly-loaded valves into the trunks for leading away hydrogen gas when valved, being taken down to the bottom of the trunk below the hydrogen gas valve by a duct. When all the air is forced out, exhaust gas will follow by the same route and fill the trunks, finally escaping into the atmosphere.

Safeguarding Against Fire

This is all plain sailing so long as the airship is climbing or flying horizontally; if she dives at more than about 50 ft./min. the whole supply of exhaust gas could not make up for the shrinkage, and it is necessary to admit air to the top of the airship again, either through automatic valves or by pumping it in from the slip-stream of the propellers in the usual way. It is argued by some that it is unnecessary to supply this gas protection, as a Zeppelin has already been struck by lightning in flight without harm, and the metal framework or net gives sufficient protection. That may be so but it does not provide for the case of spontaneous combustion from oily waste left in the ring space, or from the accidental firing of a Verey light into the gas-bags, etc., which the layer of exhaust gas has been proved capable of doing. It only fails where a stream of incendiary bullets is concentrated on one spot from a machine gun, when hydrogen may be carried by the hose effect into the open air and ignited there; but one does not expect to meet with a machine gun firing incendiary bullets at close range in a commercial ship.

In any case I feel convinced of the importance of supplying inert gas to the exhaust trunks of the airship. Steps are now taken to see that an explosive mixture of hydrogen and air does not remain in the trunks, by scouring them with air, but as soon as a hydrogen gas valve is opened an explosive mixture *must* be formed. The hydrogen passing out into the atmosphere is a good conductor of electricity, and if any atmospheric discharge does travel down it, it is better that it should find a mixture of hydrogen and exhaust gas at the bottom than a mixture of hydrogen and air. Nothing would happen in the first case; the second would involve a violent explosion in the trunk—which may account for the loss of the Dixmude. Having in mind the desirability of using the exhaust gas for protective purposes, let us glance further at the types of heavy fuel engines available.

New Power Plants

While the use of the Beardmore type engine removes our gasoline trouble, it does not provide the greatest possible economy in running. In an airship, for every ton of liquid fuel consumed 33,000 cu. ft. of hydrogen have to be got rid of to keep the airship in trim. This hydrogen is a valuable fuel. In 1 lb. of hydrogen (which is about 190 cu. ft.) there are approximately 62,000 British thermal units compared to some 19,000 in 1 lb. of petrol. Previously it was necessary to blow this hydrogen into the atmosphere, and waste it, in order to keep the ship in trim. The Eastern Asiatic Oil Co. and Mr. Ricardo carried the tests on with kerosene, getting the consumption down to 0.35 lb. per b.hp. hour. Since then, by a slight modification in the original process, an engine has been run on gas oil. Using these heavy oils

*Abstract of Paper read by Commander F. L. M. Boothby, C.B.E., before the Institution of Aeronautical Engineers, London, England, on Oct. 17, 1924.

the engines will doubtless require frequent cleaning, but if they will run for 50 hr. non-stop it is sufficient for our purpose.

The engines should be specially designed for rapid dismantling. The war-time Maybach was very good in this respect, it being possible to lift the cylinders in flight and have the engine running again within four hours, and this can doubtless be repeated. Under this system, using gas oil, we require 350 lb. of liquid fuel costing £1, and 5,000 cu. ft. of hydrogen, costing £1 5s., total £2 5s., per 1,000 hp./hr. Compare this with the cost of running on gasoline alone, when the fuel for 1,000 hp./hr. would cost £5 17s., plus 7,000 cu. ft. of gas wasted, costing £1 15s., total £7 12s.

A New Crude Oil Process

A new process of using crude oil commercially has recently been introduced. This oil only costs 3½d. per gal., as compared to 5d. for gas oil and 10d for kerosene. I am not at liberty to describe the process as the inventor has not yet published his system.

A plant using this process is working in London, so it has reached the practical stage. Suffice to say that crude oil is put into a generator which weighs about 50 lb. for an engine requiring 60 gal. of fuel an hour. The crude oil is converted into gas, which is cooled and cleaned. If used in the ordinary engine without a supercharger, 78 per cent of the maximum horsepower is obtainable. The consumption is about 0.6 lb./hp./hr. Using hydrogen in conjunction with this gas, full power can be obtained from the engine, and the consumption drops to about 0.45 lb./hp./hr., so that for our 1,000 hp. unit we should require 450 lb. of liquid fuel, costing 14s. 7d., and 6,400 cu. ft. of hydrogen, £1 12s., total £2 6s. 7d. per 1,000 hp./hr. Thus this process is not quite so economical as the last as regards cost, while the extra weight of liquid fuel required, which amounts to about a ton per 1,000 hp. unit per 24 hr., reduces the amount of paying load which can be carried.

There are other possibilities of this process, however. It is customary for airships to carry about 10-15 per cent of their total lift in the form of water ballast. Suppose we substitute crude oil. When it is required to use it as ballast, instead of throwing it overboard, we can make it into gas, which can be stored till required for use in the engines, and this gas is slightly lighter than air. We have thus got rid of our deadweight and yet have the fuel.

The extra weight involved in this system is the generator, and diaphragms in two or three gas-bags to allow of the crude oil gas being stored there, replacing the hydrogen as used in the engines. A ton should cover the total extra weight involved in a ship like the ZR-3, a sacrifice well worth making in view of the increased radius of action obtainable. Of course, this process of discharging ballast is slow, perhaps half a ton an hour could be reached, but in a sudden emergency the whole supply of crude oil could be discharged overboard, just like water ballast. Sudden emergencies should generally be dealt with by the use of swivelling propellers, which in my view should be fitted in all commercial ships.

Use of Swivelling Propellers

It is sometimes pointed out that as airships increase in size, the smaller proportionate horsepower is required to drive them at a given speed, and consequently the effect of swivelling propellers decreases as size increases, which is true. Nevertheless I think that they are always worth fitting for navigational and economic reasons. I believe we can meet with disturbed air, when rudders and elevators are little use, and if caught in down draughts the ability to be able to apply the equivalent of 5 tons of ballast by means of your engines in a ship of the ZR-3 type is most useful. The same effect could be got by dropping water ballast, but this can only be done a limited number of times, while swivelling propellers can be applied as often as necessary.

On the economic side we can imagine a ship without swivelling propellers, lying at her mooring mast with a full load and full of gas. Starting with a small initial lift she will put her helm up and force herself up to her safe flying height (which may be taken at three times the ship's length) by means of her engines and elevators. If we take this to be 2,000 ft., the ship will blow off 6 per cent of her gas in so doing, which is entirely wasted. In an 80-ton ship this would amount to 158,000 cu. ft., cost £39 10s. With swivelling propellers this gas need not have been taken on board, as no initial lift is necessary for leaving the mooring mast.

In considering the design of commercial airships due weight must be given to the important question of working them with the smallest number of men, as this is of even greater importance in the air than it is on the sea. Thus in British and German naval airships two men were allowed for each engine besides an engineer officer, and nine other officers and men.

Reducing the Crews

By simplification of design it should be possible to reduce this to one man per engine and an engineer officer; one man looking after two engines in normal flight. Again, in the control car was a helmsman, a man for the elevator controls, and an officer for navigating, etc. In small airships one man could, and frequently did, perform all these duties for long periods. There is no reason why he should not do so in large ships if suitable relay gear is used for operating controls.

Also we might follow the practice of some merchant ships and put our control position aft. In the streamline fins fitted in recent practice, ample room can be provided for rudder and elevator controls, so avoiding the long leads of wire and the necessary arrangement for taking up the slack.

What is now wanted is some process of manufacturing hydrogen with the airship's own resources. Sitting on the sea there is plenty of hydrogen in the water around, if some reasonably light electrolytic process can be found. Perhaps some system of cracking oil may meet our requirements, but it is a point that requires the earnest consideration of every aeronautical engineer who wishes to see the empire linked up by real commercial aircraft at the earliest possible date.

EDITOR OF AVIATION GOES ABROAD

With a view to gathering first hand information on the present status of aeronautics in Europe, Ladislas d'Orcy, Editor of AVIATION, will sail from New York for France on the French liner Rochambeau, Saturday, Feb. 28, next. During his sojourn abroad Mr. d'Orcy will cover the principal developments of the various aspects of aeronautics—industrial, technical, military and commercial—in special articles which will periodically appear in AVIATION.

The Light Plane Propeller

The student builder of light airplanes finds the designing and construction of a suitable propeller, perhaps his most difficult problem.

The National Advisory Committee for Aeronautics has just issued a Technical Note No. 212 entitled "Simplified Propeller Design for Low-Powered Airplanes" in which formulae and directions are given in a very simple and practical way making the selection of such a propeller a comparatively easy procedure.

With the brake horsepower of the selected engine known and the revolutions per minute at which it is delivered and also the airspeed in miles per hour, the diameter, pitch and efficiency are readily attained.

Directions are also given for the making of a complete working drawing with all dimensions.

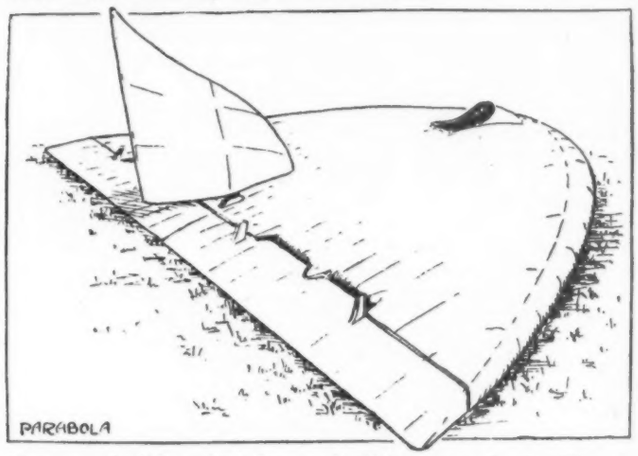
A copy of this Technical Note No. 212 can be obtained upon request from the National Advisory Committee for Aeronautics, Room 3341, Navy Building, 17th and B Streets, N. W., Washington, D. C.

LIGHT PLANES AND GLIDERS

Edited by Edmund T. Allen

Gliding Activities in Russia

Considerable success attended the holding of the second annual All-Russian gliding competition which was held near Feodosia, in the Crimea, last Septcmber, but of which detailed information has only now come to hand.



An unusual glider which has made flights up to 1 min. 20 sec. duration: The "Parabola" built by the Russian engineeer Cheranovski

Forty-eight gliders were entered as against nine the previous year and all but ten of the entries actually made flights. Whereas in 1923 the longest gliding flight, made by Leonid Youngmeister, was of only one hour's duration, last year the same pilot made an endurance flight which came within an hour of the world's record, while half a dozen pilots made flights of from four to six hours' duration.

Youngmeister, piloting a Moskvich glider, remained aloft 7 hr. 31 min. His machine is a high wing monoplane of the cantilever type which is reminiscent of the Hanover Vampyre. The span is 44 ft., the wing area 215 sq. ft. and the weight empty 200 lb.

The longest flight was made by Pilot Yakobchuk on a Kpir glider, with 6 hr. 4 min. This glider, built and entered by the Kieff Polytechnic Students' Club, is like the Moskvich a cantilever monoplane of high aspect ratio. The span is 41 ft., the wing area 198 sq. ft. and the weight empty 264 lb.

Flights of 5 hr and 4½ hr. duration were made by Pilot Sernoff on the Artamonoff glider, which is a cantilever high wing monoplane of 42½ ft. span and 176 lb. weight empty.

Pilot Rudzit, who unfortunately lost his life before the end of the competition, made a 5 hr. flight on the Ikar glider, a machine about which no information is on hand. Another entrant, Klementieff, also met his death in a flight.

All flights were made from the Uzun Sirt, an abrupt mountain range, 500 ft. high, which proved very suitable for gliding experiments as it permitted starts northward and southward according to the prevailing wind.

Most gliders were entered by aeronautic associations of technical high schools which have been formed in Russia on the German model with a view to encouraging motorless and economical flight. The ultimate purpose of the movement is to bring about the creation of an efficient low powered aerial flivver.

The most unusual looking glider was the "Parabola," invented and built by Engineer Cheranovski. This machine was literally a flying wing, as may be seen from the accompanying sketch, which we reproduce by courtesy of *Flight*. Despite its odd looks, this glider accomplished several good flights up to 1 min. 20 sec. duration, showing a flat gliding angle and rather good controllability. The pilot sits in a cockpit almost at the leading edge of the parabolic wing. A single hand wheel controls both rudder and ailerons. The latter are moved differentially for lateral control and simultaneously for elevator control. A tail skid is fitted below the rudder.

The Parabola has a span of 32 ft. 10 in., a wing area of 215 sq. ft. and a weight empty of 128 lb.

Altogether 579 flights of a total duration of 27 hr. were made by the thirty-six pilots who participated in this meet which was organized by the Society of Friends of the Air Fleet, the active aeronautic propaganda body of Soviet Russia.

Regarding the 80 cu. in. Limit

Light Plane Editor, AVIATION:—

Well! it surely does this light plane enthusiast's heart good to see you still pegging away with the 37 in. Harley sport engine. If the Englishmen can fly with motors of a little over half a liter capacity, we can. And the only way to bring the designs down to perfection is to keep the present piston displacements.

Lincoln Beachey said, shortly before he was killed in his undersurfaced monoplane, "Give me enough power and I'll fly a barn door!" And some of the light plane builders are crying, "Give us more power and we can fly our imperfect designs !"

Imperfect designs are not what we want flown. Let those planes that will not fly well with even an 80 cu. in. motor stay on the line, and the builders will come to realize that we have the motors, and we are capable of the same perfection of design that our friends across the water show.

The writer has owned and ridden over twenty different motorcycles of various sizes and types, as well as having had a hand in the design and construction of several motorcycle engined airplanes, as far back as 1916. The American motorcycle engine, if properly turned and properly balanced will do everything a pilot could demand of it. For one thing, the motorcycle engine can be altered in several respects toward a lighter weight. The flywheels of the average big turn are the heaviest parts of the engine, often weighing as much as 20 lb. They can be put in a lathe and the rims turned down so as to cut the weight nearly a third. The propeller fitted will take care of alteration, and act itself as a well balanced flywheel.

The next heaviest parts of the engine are the cylinders and pistons. The cylinders can be lightened by removing approximately half the cooling fins. That the cylinder barrel will remain cool under such nude state is in no way doubtful. The writer witnessed such a procedure on a Pope, 1916, (overhead valve) Vee type which was used with considerable success in a light plane at Saugus in 1917.

Aluminum alloy pistons should be fitted in place of the cast iron pistons, both for added power and less vibration. However, the job should be done at the factory where the engine was made, in order that the connecting rods and flywheels will be balanced accordingly. The writer has found though, that unless an excessive clearance is allowed the alloy pistons will "freeze" at high speeds, so care should be taken on that point.

Above all, the engine should be hand balanced in the factory by a factory man who knows his business. The writer was amply repaid for having taken such a step when nearly 70 mi./hr. were obtainable on a 30.5 in. single cylinder motorcycle, after having fitted an alloy piston.

This enthusiast firmly believes, in view of past road experiences, that there is one particular motorcycle engine ideally suited to light planes, which has been so far overlooked. The Indian Scout 596 c.c. engine will develop fully 11 hp. at about 3500 r.p.m. and is capable of holding up for long periods on full throttle. This is the type of engine with which the English have achieved such results. Investigation will disclose that the English V type Blackburne (of 750 c.c. cap) which was successfully flown from London to Brussels was of the high speed type, geared down to turn a stick at about 1400 r.p.m. That the Indian Scout motor will stand untold abuse is an established fact. A rider using one of these motors, beat a record across the country previously made by an 80 cu. in. Henderson.

By all means, let us keep the displacement down to the present 80 cu. in. limit.

T. A. HODGDON
Cliftondale, Mass.

New Morehouse Engine

First tests of the new 80 cu. in. Morehouse light plane engine will be conducted shortly, following which it will be fully described in AVIATION.

New American Light Plane

Ben. T. Epps of 392 Washington St., Athens, Ga., has just completed construction of the attractive looking light plane which is illustrated below . Preliminary test flights were very successful.

The Epps light plane

Following are the chief characteristics of this little ship: Span 26 ft., wing chord 5 ft., length overall 20 ft., weight empty 340 lb. The power plant is an Indian motorcycle engine of 74 cu. in. piston displacement which drives a 6 ft. propeller through a chain transmission at one half engine speed.

100 Hr. Jupiter Test at 425 Rated Hp.

A further striking demonstration of the efficiency of the Bristol "Jupiter" aircooled engine is afforded by the way in which it has just completed a 100 hr. British Type Test, as a result of which its rating has been raised to 425 b.hp. at 1650 normal r.p.m. Probably the outstanding feature of the tests was the fact that after 105 hr. running (5 hr. were taken up by runs for power curves, high speed tests, etc.) the maximum power developed was appreciably in excess of that recorded in the earlier stages and showed 473 b.hp. at 1825 r.pm.—the maximum permissible revolutions for the engine.

The series of tests which were officially supervised followed the latest schedule laid down by the British Air Ministry, which consists in the main of ten non-stop runs of 10 hr. each at 90 per cent full rated power, that is to say that the Jupiter engine was run throughout each period at 383 hp. at 1650 r.p.m. Five of the 10 hr. runs were carried out upon the Heenan & Froude dynamometer and five upon the hangar.

During the last hour of the 100 hr. period the engine was run at full throttle at normal r.p.m. when the recorded horsepower was 429. Various tests were then carried out, such as a high speed test of one hour's duration at 1920 r.p.m. and a one hour's high-power test at 1825 r.p.m., when 466 b.hp. was maintained. That the power of the engine was well maintained despite the lengthy period of test was amply demonstrated when the second power-curve was taken and it was shown that at (normal) 1650 r.p.m. the horsepower developed was 435 and at (maximum) 1825 r.p.m. the horsepower was 473.

The details taken during the tests were:—

				Consumptions		
Run	*Hours non-stop*	*Power at end*	*Fuel total*	*Galls. per hr.*	*Oil total*	*Pints per hr.*
1	10	418	277	27.7	144	14.4
2	10	419.5	278	27.8	146	14.6
3	10	416	275	27.5	131	13.1
4	10	421.3	277	27.7	142	14.2
5	10	Hangar	275	27.5	155	15.5
6	10	"	280	28	135	13.5
7	10	"	275	27.5	120	12
8	10	"	275	27.5	110	11
9	10	"	275	27.5	112	11.2
10	10	429	280	28	80	8

The last hour was run at full throttle.

The official consumption figures over the 100 hr. running, showing that the average gasoline consumption was 0.578 pints/b.hp./hr. and the oil consumption 0.033 pints/b.hp./hr., also reflected very creditably upon the engine and, from the point of view of economy, compare more than favorably with the figures shown by the leading aero engines of any type.

When dismantled for inspection the condition of the engine was found to be excellent in every respect and actual measurement showed that on none of the major components did the wear exceed 0.001 in.

Striking as are these results, they will cause no surprise among those who have everyday experience with this power unit. Since the engine was first put into service, development work has steadily continued and each improvement has enhanced even further the reliability of the Jupiter engine. Those who have followed the publication of the results which have been achieved under diversified conditions and under numerous tests will have some knowledge of the high efficiency which the Jupiter has consistently shown; but it is those who have working experience with the engine, and who know something of its reliability, its simplicity and its ease of upkeep, who best appreciate its qualities.

Who Will Buy the Liberties ?

The War Claims & Material Disposal Section of the Air Service announces a sale on Feb. 25 of 734 LeRhone 120 hp. rotary engines and 100 Liberty-12 400 hp. engines.

Speculation as to the probable use to be made of these LeRhone engines by purchasers would be idle, but a fairly safe propheey, in the opinion of one experienced small-lot dealer in aircraft engines, can be made regarding the probable future of this lot of Liberties. According to him these particular engines will be sold for about $400 each, which means that the purchaser will have to put up the sum of $40,000 for the lot. The only restriction on their sale is understood to be that each purchaser must sign an agreement that the Liberties will not be shipped out of the United States. This being so, it may be asked if any recognized dealer in aviation engines is in a position to put up $40,000 on such a speculative purchase. As this seems hardly likely, the only people with this much money for 100 second hand Liberties appear to be the bootlegging interests, according to our informant.

Consequently, in this instance, as in several others in the past, the humorous and mysterious working of popular government will again be illustrated when the Prohibition Enforcement officers encounter or are outspeeded by highpowered rum boats, equipped with Liberty engines drawn from War Department surplus stock.

N. Y. Chapter of N.A.A. Election

The New York chapter of the N.A.A. held a meeting on Jan. 29 for the purpose of electing new officers. Eddie McDonald was chosen to succeed Elmer Sperry as president. Mr. McDonald is a former naval aviator and is active in the naval reserve force. Joe Weil was elected vice president, A. Pickford, secretary, and Prof. Alexander Klemin, treasurer.

AIRPORTS AND AIRWAYS

Philadelphia News

By C. T. Ludington

Lieuts. Leslie P. Arnold and Leigh Wade spent three days in Philadelphia recently and greatly helped in putting pressure on the Landing Field project. They talked to the Philadelphia Forum, the Chamber of Commerce, and the Officers of Foreign Wars. They were escorted by a committee headed by Hollinshead N. Taylor, President of the Philadelphia Chapter of the N.A.A. Mayor Freeland W. Kendrick received them in his office and discussed the new landing field most enthusiastically. A visit was made to the proposed site of the field. Most cordial receptions were given to the two fliers at every turn and local aviation enthusiasts rejoiced in the publicity thus brought to their projects.

Photographing the eclipse of the sun furnished business for Philadelphia fliers. Pitcairn Aviation carried the Sproul group of scientists in a large four-seater, and Victor Dallin carried Fullerton Waldo of the Public Ledger staff to White Plains, N. Y., and return in his Swallow.

The steady expansion of Pitcairn Aviation, with its new Roosevelt Boulevard field is welcomed by those who realize what this will mean for Philadelphia. Now Sunday crowds motoring in and out of the city will be able to watch and to fly in well cared for, safe airplanes, operated by a responsible concern. That this venture will be successful can not be doubted and its beneficial effect on the public mind is certain.

Activity at Pine Valley at present consists in overhauling by the Ludington Exhibition Co. of its own and other peoples engines and ships in preparation for the coming season. Extensive experimental alterations are being made in a Sport Farman to adapt it to high altitude work so that it may compete for the Eldridge Trophy, and experimental construction is being pushed at the plant of Frank C. Rodgers to two new ships for the company from designs by Roy A. Miller.

Arrangements are being made to equip the Pine Valley Field for night flying. An order has been given to the B.B.T. Corporation of America for two small editions of the type of Aerodrome Floodlights that company is furnishing the Air Mail and lights will be installed. A B.B.T. flashing beacon with a distinctive characteristic will also be erected.

Recent elections of the Aero Club of Pennsylvania resulted in the choosing of the following officers: President, Harold F. Pitcairn; First Vice President, Hollinshead N. Taylor; Second Vice President, C. T. Ludington; Treasurer, W. A. Sheahan; Secretary, R. A. Miller.

The board of directors consists of the following: W. W. Kellett, Dr. Thomas E. Eldridge, Frank C. Rogers, C. B. Graham, Victor Dallin, Joseph A. Steinmetz, T. D. Hooper, Robert P. Hewitt.

The Aero Club of Pennsylvania is fortunate in having very close relations with the City Business Club and its members have often enjoyed the privilege of addressing this body. At a recent dinner the conduct of the meeting was turned over by President Banham of the Business Club to retiring President W. Wallace Kellett of the Aero Club. Effective talks were given by Mr. Kellett and Mr. Taylor, and future cooperation between the two clubs was assured.

Cleveland News

By Cy Caldwell

The Glenn L. Martin Co. has completed and shipped to Anacostia the first of seventy-five SC1 Three Purpose Planes (bombing, torpedo and scouting) developed by the Naval Bureau of Aeronautics to supplant the DT and the F5L. The ship was completed on schedule date, as is the custom of the Martin Company.

The contractor's test flights at Anacostia will be made by the only member of the Caldwell Clan who has ever given me anything but abuse—old Cy Caldwell, Sr., who lost a leg in the Spanish war, a lung in the Philippines, and the flag he was waving when the boys started for France. A man of childlike simplicity, not to say simpleness, he has the high principles and low intelligence which mark the old pilot. His bearings are worn, his valves leaking, his cylinders carboned. If he wears out a bit more we'll be able to elect him to Congress.

* * *

H. A. Kinsey and Associates are engaged in filling a contract with Aerial Surveys Inc., for aerial mapping of 240 mi. of the Cumberland River Valley upstream from Nashville, Tenn. In all some 2,000 sq. mi. of territory will be mapped by Pilot K. R. Cole and Maj. L. B. Lent, Photographer, who flew from Cleveland to Nashville Jan. 11, since when they have sent in many rolls of exposed film. Mr. Kinsey, who recently completed a contract to map Cuyahoga County for Aerial Surveys, expects to finish the Cumberland work in two months.

* * *

Ross Elkins, head of the Finishing Department of the Glenn L. Martin Co., has resigned to accept a position in California where, we are told, life is better.

Mr. Elkins started with the Martin Company in 1918, April 1, to be exact, a singularly suitable day on which to enter the airplane business.* While the present Martin factory with its luxurious club rooms and private swimming pool for the test pilots was yet under construction, Mr. Elkins worked on the fuselage of the first Martin Bomber, in a loft in Cleveland. He had no tools, or practically none—just his bare hands, and, I believe, a nail file.

His department in the Martin factory, presented him with a brief case for pints and a traveling bag for quarts, with the hope that before either are worn out he will tire of the sunshine of California and return to bask in the fog, sleet, and smoke of Cleveland, the Winter Paradise.

Rochester (N. Y.) News

Col. Theodore Roosevelt, speaking on Aviation before the Rochester Add Club of Rochester, N. Y., took a decided stand against a united Air Force and proposed instead a policy of "coordination and cooperation" between the existing services.

The Colonel continued to press his argument by saying that the air services were still "Auxillary" to other branches of our defense forces and that the efficiency of our entire defense program would be imperiled by their union.

Referring to commercial aviation, Colonel Roosevelt urged the importance of a codification of Air Law, of continued support of the Air Mail and of the Wadsworth Bill, providing for a civilian Air Bureau in the Department of Commerce. He also pointed out some of the existing evils in the government's relations with the airplane industry and advocated the assistance of the industry by the creation of a preferred list.

French Expert Joins Pioneer Staff

The Pioneer Instrument Co. of Brooklyn, N. Y., has announced the addition to their technical staff of Louis D. J. A. Dunoyer, of Paris. Mr. Dunoyer is a well known French consulting engineer. He will act in an advisory capacity for the Pioneer Company and will particularly assist their French representative, R. E. Badin, in the introduction of their Earth Inductor Compass in Europe.

*The peculiar suitability of April 1 for starting an aeronautical venture seems to be particularly recognized in Great Britain, where both the Royal Air Force and the Imperial Airways, Ltd. officially came into being on that date, the first in 1918, the second in 1924.—Editor.

Curtiss Flying Activities, 1924

The Curtiss Exhibition Co. of Garden City, N. Y., which is headed by C. S. (Casey) Jones, reports a very successful business year for 1924. During this period the ships of the company did total flying of little more than 1500 hr., covering over 10,000 mi. and carrying more than 3000 passengers without a fatality. There were only three forced landings during all this time in which the machine sustained any damage at all, and even in these cases the damage was of a minor nature. This speaks extremely well not only for the skill of the pilots but also for the conscientious work of the ground force.

The following is the division of the percentage of flying for different types of work:

Instruction	25%
Passengers	27%
Air photographs	22%
Cross Country and miscellaneous flying	24%
Student solo	2%
Total	100%

Among the jobs of especial interest were the delivery of the *New York Times* and the *New York World* to Cleveland every morning during the Republican Convention, the machines leaving Garden City at daybreak and delivering the papers in Cleveland at 9:00 o'clock; the transportation of the weekly payroll of the Spalding Construction Co. between Curtiss Field and the new Air Mail Field, and the delivery of pictures and films for newspapers and film companies on various special events, notably the Republican and Democratic Conventions, the arrival of the World Fliers in Boston, the death of President Wilson, the death and burial of President Coolidge's son.

The Curtiss Exhibition Co. had an active part in the Dayton Races, winning first place in the "On to Dayton" and the "Central Labor Union" Races, and taking second place in the "Detroit Country Club" event and the "Central Labor Union" Race—a very good percentage with only two entrants.

Akron News

Lieut. Harry H. Mills, A.S., of Fairfield Intermediate Air Depot, Fairfield, Ohio, was the principal speaker at a dinner meeting of the Commercial Aircraft Association and the East Akron Board of Trade held in the Goodyear dining hall Wednesday, Jan. 28.

The air service man spoke on the needs of the nation for additional aircraft both for commercial and military purposes and told something of the work accomplished by army fliers during the past year.

He brought with him films depicting the World Flight, which were shown at the close of the meeting. Maj. N. W. Peek, A.S. was toastmaster.

Mills flew from Dayton to Cleveland for the meeting in a DH4.

* * *

Maj. Norman W. Peek who has been stationed in Akron for more than two years left recently with a staff of five men for Scott Field, Belleville, Ill., where he will direct the erection of the new army semi-rigid airship "RS-I," built in the Goodyear factories here.

Major Peek was one of the winners in the 1924 National Elimination Balloon Race from San Antonio, Tex. last May and participated in the 1924 James Gordon Bennett race from Brussells in June.

* * *

The airship TC8, a training airship built by Goodyear for the Army was shipped to Scott Field, Feb. 5 where it will be assembled.

The new ship has a gas capacity of 200,000 cu. ft., is 196 ft. long and 48 ft. in diameter. It is powered with two 150 hp. Hispano-Suiza motors.

Goodyear is now building two other TC type ships, and three TA ships. The TA is a smaller ship and will also be used for training purposes.

The RS1 was shipped several weeks ago.

Kansas News

The Swallow Airplane Mfg. Co. of Wichita, Kan. has been kept very busy during the past months turning out a great number of New Swallows for private customers. The popularity of this ship is indicated by the fact that more Swallows have been sold during the last sixty days than ever before. Recent customers include the Checker Air Service Co. of San Francisco, the establishment of which is recorded elsewhere in this issue, to the order of which two OXX6 Swallows will shortly be delivered by the Wichita plant.

Recently an OXX6 Swallow was sold to a customer in Texas who is extremely pleased with the ship. He reports that while flying in New Mexico he took off with a total useful load of 1186 lb. from an altitude of 4500 ft., climbed to 9000 ft. and crossed a 300 mi. stretch of mountainous country. His load included 50 gal. of gasoline. As the OXX Swallow weighs empty 1256 lb., it will be seen that his useful load came within 70 lb. of the ship's own weight, which is truly a wonderful performance for such a small plane.

The following are sales agents for the Swallow Company: Victor Dallin, Philadelphia; Parker & Gaddis, Blackwell, Okla.; Philipps & Bowman, Tulsa, Okla.; Walter T. Varney, San Francisco.

* * *

Iola, Kan. staged a very successful flying circus recently. All ships present did good business carrying passengers at $2.50 per head.

J. G. Mollendick, president of the Swallow Airplane Mfg. Co., was recent visitor at Iola, giving a talk on the New Swallow. Harry Crewdson has sold his Canuck to Carl Watts of El Dorado, Kan., and is now busy building up a five-place Standard for his own use. B. T. Barber made a trip to Western Kansas in his Laird. Royal Geery has his Swanson SS3 nearly ready to fly. Clarence Clark is working on a light plane for a local planing mill. Paul Neff is building a 600 lb. ship around a 50 hp. motor. He also has a new Standard J1 on the field.

The aid of the local Chamber of Commerce is being enlisted to make the Iola field one of the best in Kansas.

* * *

The firm name of Ruch & Yeoman, commercial fliers of Haviland, Kans. has been changed to Ruch and Co., Mr. Ruch having purchased the interests of Mr. Yeoman. Mr. Ruch writes to the effect that he is still flying his Standard and that when the weather is fit barnstorming is good in Kansas.

Willie Toadvine, with B. F. Billings as pilot and Chet Frankenhauser as mechanic, just returned from a trip to southern Oklahoma, where they report a rushing business with Mr. Toadvine's New Swallow.

Flying over Pittsburgh

"I have been marooned beneath the smoke of Pittsburgh for the past week playing the game of 'hunt for sunshine'," writes Photographer Smith of the Fairchild Flying Corp.

"It is quite a job to find out if the sun is really shining owing to large quantities of soot and cinders which float around and settle on your face at night, effectually disguising you like a stoker. I am told the sun did once shine here but the phenomenon was during a coal strike.

"When it snows here it does not interfere with our aerial photographic work much as the soot soon settles on it and turns it black as if no snow had ever fallen. You have to eat very fast also as the cinders settle on the food so quickly. This probably accounts for the fact that Pittsburghers are so 'full of grit'."

Lincoln-Standard Activities

Ray Page, President of the Lincoln Standard Aircraft Corp. of Lincoln, Nebr., has gone on an advertising and demonstration trip with one of the Company's new LS5's. He will tour Texas, Arizona, going first to El Paso, then to Tucson and Phoenix into the mountainous country.

This trip will also take him into Mexico as far south as Mexico City, where the company have prospects of renewing their former sales to that country. As the altitude at Mexico City is 9,000 ft., the LS5 which Mr. Page is taking with him has been powered with 180 hp. high compression motor.

Mr. Page expects to be gone for about two months.

UNITED STATES AIR FORCES

U. S. ARMY AIR SERVICE

Army Air Orders

Resignation of Sec. Lieut. Worth Harper, A.S., accepted.

Sec. Lieut. Park Holland, A.S., promoted to grade of First Lieutenant.

Master Serg. Thomas H. Dix, 22nd Photo Sec., A.S., Kelly Field, retired.

First Lieut. Ross F. Cole, A.S., Langley Field, to Kelly Field.

Private LeRoy Naughton, A.S., Boston airport, to Mitchel Field.

Courtesy N. Y. Tribune

Any one feeling bored should remember there's a whole new world waiting to be explored

Private William A. McCurdy, A.S., Mitchel Field, to Boston airport.

Sec. Lieut. Francis William Johnson, A.S., Brooks Field, transferred to Infantry.

Staff. Serg. Charles E. Myers, A.S., Langley Field, retired.

Spec. Ord. No. 302, relieving First Lieut. William C. Farnum, A.S., from duties Kelly Field, and directing him to sail on transport for Panama April 9, revoked, Lieutenant Farnum to sail June 16 from San Francisco on transport for Hawaiian Islands.

Sec. Lieut. Ernest S. Moon, A.S., Kelly Field, to San Francisco, sailing June 16 on transport for Hawaiian Islands.

Spec. Ord. No. 271, amended to relieve First Lieut. Kenneth C. McGregor, A.S., from duties Kelly Field and to direct Lieutenant McGregor to report for temporary duty Bolling Field, at the expiration of which to proceed to New York City and sail on transport April 9 for Canal Zone.

Sec. Lieut. John L. Davidson, A.S., Kelly Field, to San Francisco, sailing Feb. 18 on transport for Hawaiian Islands.

First Lieut. Auby C. Strickland, A.S., Kelly Field, to temporary duty San Antonio, at the expiration of which to Muskogee. Lieutenant Strickland will be placed on detached Off. list upon reporting at Muskogee.

Sec. Lieut. Warfield Richardson Wood, A.S., Brooks Field, transferred to Field Art.

Capt. Thomas J. Hanley, jr., A.S., upon completion of course Army Ind. College, to Chief A. S.

Majs. Douglas B. Netherwood, A.S., and Shepler W. Fitzgerald, A.S., and First Lieut. Charles W. Steinmetz, A.S., to temporary duty Army Ind. College, upon completion of which to return to former duties.

Another Landing Field in Hawaii

According to a recent issue of the Honolulu *Star-Bulletin*, the plantation town of Hawi in Kohala, showing a spirit of progress and a realization of the role the airplane is destined to play in inter-island traffic, has just completed a landing field on land given by the Hawi Mill and Plantation Co., and is anxiously waiting for the arrival of the first airplane.

The field is about ten acres in size, being 400 ft. wide and 1200 ft. long. Leslie Wishard, manager of Union Mill Co., who was an instructor in the Air Service during the war, says that so far as he knows the Hawi field is the best on the island, and the officers from Luke Field, who were recently in the district, were very much pleased with the field and its situation.

Hawi is the first landing place between Hana and Hilo, and the new field is expected to do much to relieve the anxiety felt by pilots who fear trouble while crossing the channel between Maui and Hawaii. With an airdrome awaiting them at Hawi, they will be able to slip in to safety and make whatever adjustments or repairs are necessary.

Reenlistments in the Air Service

That the Air Service is a popular branch of the service among enlisted men may be gathered from the following communication from the Second Division Air Service, Fort Bliss, El Paso, Tex.:

"The men of the Second Division Air Service are satisfied with their unit and station, as is proved by the number of reenlistments. Of the last thirteen men discharged, eight have reenlisted. Of the next fourteen men due for discharge, nine are quite sure of reenlisting, and possibly two others of these fourteen will remain. We believe this record is ahead of that of any other organization in the Army, at least we can recall no instance of such a large percentage of reenlistments for the same organization."

Flying at Kelly Field

Considerable flying has been done at Kelly Field during the holidays. A large number of enlisted men living within the 500 mi. radius were taken on cross-country trips to their homes for Christmas and New Year. Exceptionally good weather is being made use of by the present class in the Advanced Flying School for cross-country flying. About twenty students a day are making cross-country flights.

During the month of December, 34,183 cross-country man miles were flown in the 10th School Group. The flying time for the month of December for the 10th School Group was 1,673 hr., comprising 6,701 flights of which 172 were on cross-country.

Flying Activities in Hawaii

During the month of December the Fifth Composite Group in Hawaii flew a total of 152 hr. and covered 8,038 man miles.

Aerial Gunnery Training at Ellington Field

A flight of forty DH4B airplanes, carrying the instructors, enlisted personnel and students of the 10th School Group, Kelly Field, Tex., took off on the morning of Jan. 19 for Ellington Field, Houston, Tex., for two weeks of maneuvering and aerial gunnery. The flight was preceded on the 18th by seven Martin Bombers, carrying Capt. R. C. Candee and an advance detachment and supplies for the temporary school.

The advance party went ahead of the main flight to prepare accommodations for the school. Arrangements were made for the use of the extensive range at Ellington in carrying out the prescribed course of gunnery of the advance school. Stationary targets, cone targets towed by planes, and shadow targets on water were used in the course.

Included in the detachment making the trip were 35 student officers and cadets, 21 permanent officers and 75 enlisted men. Martin Bombers were utilized to take supplies and equipment from Kelly Field.

Airship TC4 Flown to Washington

Capt. William O. Butler, A.S., recently flew the Airship TC4 from Langley Field, Va., to Washington, D. C., and return. He brought back as a passenger the well known Professor Todd, who is one of the foremost astronomers of the day. Professor Todd described his flight as delightful, and sees a great future for lighter-than-air craft. Maj. Oscar Westover, Commanding Officer of Langley Field, met Professor Todd on the landing field and escorted him around the field. The Professor is deeply interested in the development of the United States Air Service.

Maj. Rush B. Lincoln and Capt. Dudley B. Howard, of the Office Chief of Air Service, also returned as passengers aboard the airship.

Rockwell Field Staff for 1925

The commissioned personnel for 1925 of the Rockwell Air Intermediate Depot, Coronado, Calif., unless unforeseen changes take place, will be: Lt. Col. Harry Graham, A.S., commanding officer; Capt. J. H. Houghton, A.S., Chief Supply Division; Capt. R. G. Ervin, A.S., Chief Engineer Officer; Capt. William C. Ocker, A.S., Operations Officer; Capt. Ezra Davis, Q.M.C., Quartermaster; Capt. L. M. Field, M.C., Post and Flight Surgeon; Capt. Lowell H. Smith, A.S., Chief Inspector; 1st Lt. John G. Williams, A.S., Assistant Supply Officer; 1st Lt. A. B. Pitts, A.S., Agent Finance and Emp. Off., and 1st Lt. Bernard T. Castor, A.S., Adjutant.

Obituary Notice

Sec. Lieut. Duane Grant Warner, A.S., died in the hospital at Mt. Clemens, Mich., on Jan. 23, 1925, as a result of injuries sustained in an airplane crash on Jan. 19, at Selfridge Field. Lieutenant Warner was born at Hamden, Conn., March 8, 1899, and was on duty at Selfridge Field from Aug. 6, 1924, to the time of his death.

Australian Air Officer Inspects Selfridge Field

Wing Commander Richard Williams, of the Royal Australian Air Force, recently paid a visit to Selfridge Field, Mt. Clemens, Mich. He unofficially inspected hangars and equipment and was much impressed with the new Curtiss Pursuit ships, type PW8, which he said are very similar to those now used in his department.

Swedish Aviator Visits Langley Field

The 20th Squadron at Langley Field, Va., recently had the pleasure of demonstrating to Lieutenant Stromme of the Swedish Air Service, the Martin Bomber type airplane. Lieutenant Stromme, who is on a short visit to this country, appeared to be highly enthused over the manner in which the activities at Langley Field are conducted.

Pioneer Aeronaut Visits Rockwell Field

Frank L. Lahm, Vice President of the Fédération Aéronautique Internationale, with headquarters at Paris, France, and father of Col. Frank P. Lahm, Air Officer of the Ninth Corps Area, two of the most notable figures in the history of American Aviation, were recent visitors at Rockwell Field.

The elder Mr. Lahm has resided in France forty-four years, twenty years of which he has represented the United States in the F.A.I., the supreme governing body of civil aviation in the twenty-five nations signatory to the Association.

Mr. Lahm, Sr., taught Colonel Lahm how to pilot a balloon. How many years ago this happened may be judged by the fact that Colonel Lahm holds spherical balloon license No.3, dirigible pilot's license No. 2 and aviator's certificate No. 2. Both father and son made flights with the Wright Brothers in the pioneer days of heavier-than-air craft, the elder Lahm with Orville and Wilbur Wright in France and Colonel Lahm at Fort Myer, Va.

Reserve Officers in Training at Langley Field

The old saying that once flying gets you you will never give it up must be true. Eight Reserve Officers from many parts of the States have just finished a two weeks' course at Langley Field, Va., and even in freezing weather they were more than anxious to push Jennies around the airdrome. Some few who were so unfortunate as to fail to get by the flight surgeon did not give up hope and came to the line every morning and were usually given good long cold rides in Martin Bombers and DH's. From now on a class of Reserve Officers is expected in once a month for two weeks' courses.

On Dec. 13 a gigantic aerial review was staged for all Reserve Officers in the vicinity, and afterwards a luncheon was given them at the Officers' Club, where all the modern equipment of airplanes was on display for their benefit.

World Flight Commander Returns to Rockwell Field

Capt. Lowell H. Smith, world flight commander, reported for duty at his regular station, Rockwell Air Intermediate Depot, Coronado, Calif., on Jan. 5. He was granted a short leave of absence which he intends to spend at San Diego and with his parents in Los Angeles. The magnificent automobile presented to Captain Smith by the City of Chicago, which was shipped to Rockwell Field, is now being used by the famous airman.

Biggs Field, Ft. Bliss

The War Department has designated the field at Fort Bliss, Tex., as "Biggs Field" in honor of First Lieut. James Berthea Biggs, A.S., who was killed in an airplane accident Oct. 27, 1918, at Belrain, France.

U. S. NAVAL AVIATION

Naval Air Orders

Ens. Frank Akers, det. U.S.S. Sumner; to temp. duty under instr. in Aviation, Nav. Air Sta., Pensacola, Fla.

Lieut. Joseph W. Gregory, det. Nav. Air Sta., Pensacola, Fla.; to command U.S.S. S-33.

Lt. (jg) Francis Taylor, det. U.S.S. Shawmut; to U.S.S. Colorado.

Ch. Bosn. Carl Axelson, det. Nav. Air Sta., San Diego, Calif.; to U.S.S. Gannet.

Comdr. Samuel L. Henderson, det. U.S.S. Henderson; to Naval Proving Gnd., Dahlgren, Va.

Lieut. Robert H. Lakes, (CC), det. Nav. Air Sta., Anacostia, D. C.; to Navy Yard, Phila., Pa.

Lieut. Charles A. Nicholson (CC), det. Nav. Aircraft Factory, Navy Yd., Phila, Pa.; to temp. duty, Nav. Air Sta., Pensacola, Fla.

Lt. (jg) Lloyd Harrison (CC), det. Nav. Aircraft Factory, Navy Yard, Phila., Pa.; to temp. duty, Nav. Air Sta., Pensacola, Fla.

Lt. (jg) Lisle J. Maxson (CC), det. Insptr. of Nav. Aircraft, Chance Vought Corp., L. I., City, N. Y.; to temp. duty Naval Air Sta., Pensacola, Fla.

Bosn. George F. Kahle, det. U.S.S. Langley; to VS Sqd. 2, Aircraft Sqds., Battle Flt.

Lieut. Alva Henderson, det. Nav. Air Sta., San Diego, Calif.; to U.S.S. Vega.

Lieut. Morton T. Seligman, det. Aircraft Sqds., Battle Flt.; to Nav. Air Sta., Pearl Harbor, T. H.

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Publisher's News Letter

Newspapers have asked for a clear statement of just what air advocates want. The following was written with the hope that it would clarify the confusion that exists in the mind of the public:

The similarity of the terms United Air Services, a Separate Air Force and Independent Air Force is partly responsible probably for the confusion in the mind of the public as to just what the proponents of aviation wish. An understanding of what these rather loosely defined and still more carelessly used expressions mean, as well as a statement regarding the present status of government aviation, may serve to make more understandable the controversy now agitating the whole country.

At present, as is generally known, the Army has its Air Service. The extent of the Army's interest lies entirely in the sphere of reconnaisance, artillery fire control and bombing as it may be used on land and for the coastal defense of land establishments. To enable these to function, fast pursuit airplanes have to be available for clearing the skies of enemy aircraft. Added to this the Army employs captive balloons for artillery fire observation and small airships for reconnaissance. Beyong serving the troops on the ground, the Army has no interest in aviation. Every dollar spent in extending the aerial branch of the military establishment is taken from the general Army appropriation. As Air Service officers on flying duty receive fifty and seventy-five per cent extra pay, the aviators in the Army have always been considered as unduly favored by the rest of the Army. Maj. Gen. Mason M. Patrick is the highest paid officer in the Army while Brigadier General Mitchell receives more than a Major General. It is obvious that position carrying such increases in pay together with increase in rank are targets for critical comment.

In the Navy the conditions, while similar, are not so acute. The plan of rotation of duty makes any officer's stay with the Bureau of Aeronautics comparatively short. From two to four years is about the average length of service of a naval flying officer after which he returns to the fleet. The Navy uses aircraft of all kinds for service with the fleet and for patroling the lanes of ship commerce. Here, too, the Navy regards aircraft as an adjunct to its main combatant unit—the fleet. Airplanes and airships are used for scouting, patrol, torpedo carrying, bombing, fighting and gun spotting, all it will be seen are to aid the fleet in carrying out its mission of destroying the enemy fleet or commerce.

The Post Office Department operates the Air Mail, the success of which is well known.

The Winslow Bill, now pending in Congress, would create in the Department of Commerce still another Bureau for the regulation, control and supervision of civilian aircraft.

The National Advisory Committee for Aeronautics, The Bureau of Standards, The Department of Agriculture and about a dozen other bureaus are all interested in aviation at some point.

In various parts of the country there is a duplication of flying fields, repair shops, government aircraft factories, laboratories, training schools and aviation personnel. The total cost of these scattered aviation activities of the government during the last five years has been over $433,000,000.

Now what do the aviation people want? To put it succinctly, they desire that the government give aircraft an opportunity to prove its wider utility without the limitations that a "Service" implies. To obtain this enlarged scope, a change in the present system is desired. The three plans mentioned in the first paragraph have been proposed with this end in view.

The United Air Service plan provides for combining the present services of the Army, Navy and Post Office and placing the personnel under a single control. All procurement of aircraft, upkeep, training of aviators and the maintenance of a central reservoir of flying personnel would come under this Bureau or whatever it would be called. It would, however, still be a service like the Marine Corps. This plan is not widely supported.

The Separate Air Force would be a branch of a Department of Defense, co-equal with the Army and Navy, all three directed by a Secretary of Defense, the aviation branch being under an Assistant Secretary. This plan is the one proposed by the report made to President Harding for the reorganizing of the federal executive departments and is the ultimate aim of all aviation advocates. This plan is favored by President Coolidge, but he believes that it is not time yet for such a great reorganization of the War and Navy Departments.

An Independent Air Force is the first step proposed by aviation advocates to be taken toward the previous plan. As outlined in the Curry Bill, a Secretary of Aeronautics having a cabinet portfolio would head a Department of Aeronautics having three Bureaus. A Procurement Bureau would provide aircraft for all government air work. All experimentation, repair and upkeep would be under the direction of the civilian head of the Procurement Bureau.

The supervision, control and regulation of commercial aeronautics would be placed under a second Bureau. The functions of this Bureau are practically identical with those that it is proposed to place in the Department of Commerce by the pending Winslow Bill.

The third Bureau under the Department of Aeronautics would be charged with the development of aircraft for war uses. Under the direction of a flying officer there would be centered all training, control and direction of the officer and enlisted personnel of the Air Force. This plan is in effect in Great Britain and Italy.

From this new Department other government departments would draw their flying personnel and equipment required for their own service. But besides this service to the Army, the Navy and the Post Office and other governmental aviation agencies the Independent Air Force would develop aircraft as a major striking force of the country's armed strength. It is here that the advocates of a change in the present system meet the strongest opposition and greatest resistance. The Navy has fears about its battleships and the Army for its coast defense organization.

It will be seen from the above proposals that aviation supporters do not desire complete freedom from control of unsupervised development. However, they do appeal to the country for the sake of the national defense for an immediate opportunity for independent action and later, when their assertions are further demonstrated, a place with other protective agencies commensurate with the importance warranted by a carefully considered national air policy.—L.D.G.

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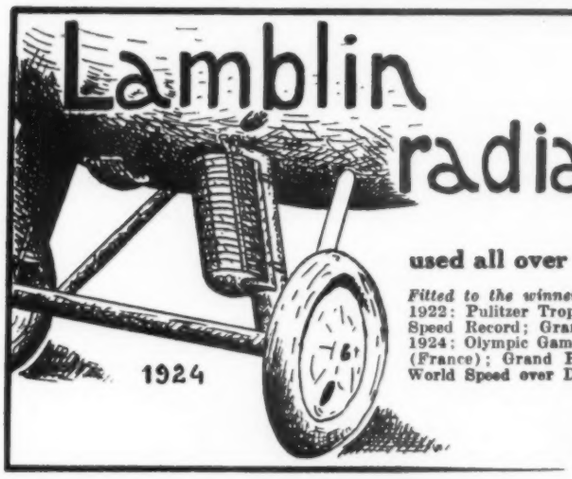

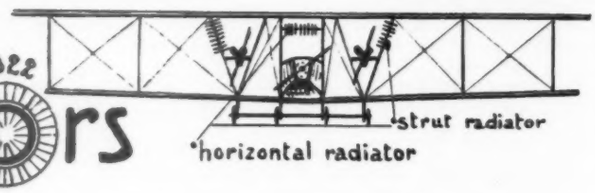

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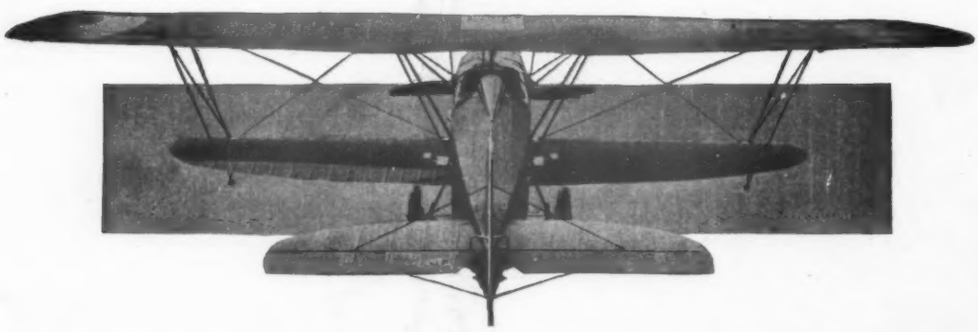
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